

NEES EFRC Poster Session

May 8-9 2014, Sandia, Albuquerque, NM

1. Lithographically Patterned Gold/Manganese Dioxide Core/Shell Nanowires for High Power Supercapacitors – Electrochemical and Raman Spectroscopic Characterization

Girija Thesma Chandran, Wenbo Yan, Mya Le Thai Reginald M. Penner
University of California, Irvine

2. Binding of Alkali Metals to Pore Walls in Nanopores Modulates Transmembrane Ion Current and Ionic Rectification

Trevor Gamble, Karl Decker, Timothy S. Plett, Matthew Pevarnik, Jan-Fredrik Pietschmann, Ivan Vlassiuk, Aleksei Aksimentiev, Zuzanna S. Siwy
UC Irvine; Univ of Illinois, Urbana-Champaign; TU Darmstadt, Germany; Oak Ridge NL; UC Santa Barbara

3. Hierarchical Architectures for Energy Storage Devices Using Viral Nanotemplates

Konstantinos Gerasopoulos, Markus Gnerlich, Sangwook Chu, Ekaterina Pomerantseva, James N. Culver and Reza Ghodssi
University of Maryland, College Park; Drexel University

4. 3D Aluminum Oxide: Fabrication, Characterization and Applications as Templates for 3D Structured Electrodes

Eleanor Gillette, Sang Bok Lee University of Maryland, College Park

5. Scanning Probe Microscopy of Low-Dimensional MnO₂/Carbon Composite Electrodes

Nathan T. Hahn, Kevin R. Zavadil
Sandia National Laboratories, Albuquerque, NM

6. *In Situ* Observation of Volumetric Expansion in Nanostructured MnO₂

Brad Corso, **Tetyana Ignatova**, Deng Pan, O. Tolga Gul, Philip G. Collins
University of California, Irvine

7. *In-situ*, Real-time Monitoring of Microstructural and Mechanical Property Changes in a V₂O₅ Battery Electrode Using a MEMS Optical Sensor

Hyun Jung, Konstantinos Gerasopoulos, Markus Gnerlich, Alec Talin, Reza Ghodssi
University of Maryland, College Park; Sandia National Laboratories, Livermore, CA

8. Atomic Layer Deposition of Lithium Solid Electrolytes

Alex Kozen, Alex Pearce, Marshall Schroder, Malakhi Noked, Chanyuan Liu, Chuan-Fu Lin, Sang-Bok Lee, Gary Rubloff University of Maryland, College Park

9. Ethylene Carbonate Decomposition on LiMn₂O₄ (111) Surface

Nitin Kumar, Kevin Leung, D. J. Siegel
Sandia National Laboratories, Albuquerque, NM; University of Michigan, Ann Arbor

10. Probing the Li/Si(111) Interface with a CNT-Terminated Tip: Li Nanopipetting and Surface Diffusion

Jonathan Larson, Satyaveda C. Bharath, William G. Cullen, Janice E. Reutt-Robey
University of Maryland, College Park

11. Imaging Dynamic Li Electrode Processes via an *in-situ* TEM Liquid Cell

Andrew J. Leenheer, John P. Sullivan, Katherine L. Jungjohann, Kevin R. Zavadil, C. Thomas Harris
Sandia National Laboratories, Albuquerque, NM

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12. Ion Transport in Nanochannels

Xin(Sylvia) Li, Weihua Guan, Mark Reed
Yale University

13. All-in-one Nanopore Battery

Chanyuan Liu, Xinyi Chen, Eleanor I. Gillette, Alexander J. Pearce, Alexander C. Kozen, Marshall A. Schroeder, Keith E. Gregorczyk, Sang Bok Lee, Gary W. Rubloff
University of Maryland, College Park; Lam Research Corporation, Tualatin, OR; CIC nanoGUNE, Spain

14. Controlled Cathode/Catalyst Architectures for Li-O₂ Batteries

Malakhi Noked, Marshall Schroeder, Chanyuan Liu, Alex Pearce, Alex Kozen, Gary Rubloff, Sang Bok Lee
University of Maryland, College Park

15. Origins of the Enhanced Capacity Retention in Copolymerized Sulfur - Based Nanocomposite Cathodes for High-energy Density Li-S Batteries

Vladimir P. Oleshko, Jenny Kim, Jenny L. Schaefer, Andy Herzing, Jeremy Ticey, Steven D. Hudson, Christopher L. Soles, John Cumings, Adam G. Simmonds, Jared J. Griebel, Woo Jin Chung, Jeffrey Pyun
University of Maryland, College Park; NIST; University of Arizona, Tucson

16. Electrochemical Lithiation of Manganese Dioxide Within Nanopore Structures

Timothy Plett, Trevor Gamble, Eleanor Gillette, Mya Le Thai, Reginald Penner, Sang Bok Lee, Zuzanna S. Siwy
University of California, Irvine; University of Maryland, College Park

17. Love Thy Neighbor: By Charging Them

Pradeep Ramiah Rajasekaran, Peng Gao, Xiaojian Wu, William Hardy, Charles. R.
Martin University of Florida

18. Freestanding, Binder-Free, 3D Li-O₂ Battery Cathode

Marshall Schroeder, Malakhi Noked, Alex Pearce, Alex Kozen, Gary W. Rubloff Sang Bok Lee
University of Maryland, College Park

19. Electrochemical Insertion/Deinsertion of Mg²⁺ Ions into MnO₂ Nanowires

Jaehee Song, Malakhi Noked, Eleanor Gillette, Sang Bok Lee
University of Maryland, College Park

20. Adsorption and Reaction Branching of Molecular Carbonates on Neat and Lithiated C(0001) Substrates

Wentao Song, Satyaveda Bharath, Janice Reutt-Robey
University of Maryland, College Park

21. Defect-Tailored Interface Stabilizes Si-C Composite Anodes

Chuan-Fu Sun, Hongli Zhu, Morihiro Okada, Karen Gaskell, Yoku Inoue, Liangbing Hu, and
YuHuang Wang University of Maryland, College Park; Shizuoka University, Japan

22. In Situ Electrical Characterization of MnO₂ Nanowires

Mya Le-Thai, Wenbo Yan, Rajen Dutta, Reg Penner
University of California, Irvine

23. Graphene/sulfur and CNT/sulfur Nanocomposite Heterostructures for Ultrafast, Long-life, High-energy Density Lithium-sulfur Batteries

Jeremy Ticey, Vladimir Oleshko, Chao Luo, Chunsheng Wang, John Cumings
University of Maryland, College Park; NIST